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May 26, 1998

US-PAT-NO: 5756770

DOCUMENT-IDENTIFIER: US 5756770 A

TITLE: Synthesis of stable, water-soluble chemiluminescent 1,2-dioxetanes and intermediates therefor

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|-----------|-------|----------|---------|
| Bronstein; Irena Y. | Newton | MA | | |
| Edwards; Brooks | Cambridge | MA | | |

US-CL-CURRENT: 549/220; 549/221

ABSTRACT:

A novel synthesis of 1,2-dioxetane phosphate alkali metal salts and novel intermediates employed in this synthesis are disclosed. A hydroxyaryl enol ether alkali metal salt having the formula: ##STR1## wherein T can be an unsubstituted or substituted adamant-2'-ylidene group, R.sup.3 can be a methyl group, Y can be a phenyl group and M.sup.+ can be a sodium cation, is reacted with a phosphorohalidate to give the corresponding enol ether ethylene phosphate, which is then reacted with an alkali metal cyanide to give the corresponding enol ether cyanoethyl phosphate diester alkali metal salt intermediate. Singlet oxygen addition to this enol ether cyanoethyl phosphate diester alkali metal salt intermediate to give the corresponding 1,2-dioxetane cyanoethyl phosphate diester alkali metal salt, followed by .beta.-elimination of the cyanoethyl group using an alkali metal hydroxide or the like, gives the corresponding 1,2-dioxetane phosphate alkali metal salt.

3 Claims, 0 Drawing figures

Exemplary Claim Number: 1

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|-------|-------|-------|-------|-------|-------|-------|-------|
| Full | Title | CIT.1 | REV.1 | CLS.1 | REF.1 | SEQ.1 | ATT.1 |
| RAW.1 | | | | | | | |

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| Term | Documents |
|---|-----------|
| CHLOROPHENYL.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 51664 |
| CHLOROPHENYLS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB. | 47 |
| (4 AND CHLOROPHENYL).USPT,PGPB,JPAB,EPAB,DWPI,TDBD. | 1 |
| (L4 AND CHLOROPHENYL).USPT,PGPB,JPAB,EPAB,DWPI,TDBD. | 1 |

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